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ABSTRACT

Vocabulary level of 10 special students was determined and compared to their supposed level of proficiency on the Functional Basic Word List for Special Pupils (Tudyman and Groelle, 1958). Ss were five educable mentally retarded (EMR) students (CA 9-6 to 12-0, IQ 64-77, MA 6-6 to 9-7) and five matched emotionally disturbed students. Word sampling procedures were used in the development of procedures used to measure reading, written, and oral vocabulary levels. If a S knew a group of four words at a certain vocabulary proficiency level, he was advanced to the next level, since knowledge of four random words at a level was found to indicate knowledge of all words at that level. Results indicated that testing procedures developed could be used to determine students' level of vocabulary proficiency. In general, the Ss could read the words that Tudyman and Groelle suggested as expected for them. In addition, Ss knew the meaning of words at levels higher than their expected levels when tested orally. It was determined that the three tests (reading, written, oral vocabulary level) could be condensed into two tests by having Ss read written words aloud on the written test. Significance of student vocabulary level in comprehension of audiovisual material is discussed. (KW)

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VOCABULARY LEVEL

ONE VARIABLE AFFECTING LEARNING FROM AUDIOVISUAL MEDIA

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Learning from audiovisual media is affected by many variables. One such variable may be the vocabulary comprehension level of the student and the vocabulary used in the films.

At the Computer Based Project captioned films are evaluated for mentally retarded and emotionally disturbed children. One step in the evaluation procedure is as follows: the students are shown a sound captioned film, after the film, 10 multiple choice questions are presented on a slide and read by the experimenter. The student pushes a button to indicate his response. The role of vacabulary is immediately evident. The student must understand the words used to describe the concepts in the film and he must understand the post-film questions.

If the correct meaning of words is not communicated the probability of a student answering the post film questions correctly is greatly reduced.

The task of this study was to determine whether a student knew words in a film. The value of this is that producers of films could control the vocabulary used more carefully. Teachers could determine words a student knew and then teach the words needed so that comprehension from films would be facilitated.

One method to do this was to determine if each student knew every word on every film. The other alternative, the one chosen, was to determine the level of each child on a standard list and determine the level of a film on that same list. The list chosen was the Functional Basic Word List for Special Pupils.

First the words from each film were extracted and compared with the list to determine the percentage of words at each level and the words not on the list. The next step, the one described in this paper was to determine the vocabulary level of each student on the list.

The list is described and basic assumptions are presented. The method section describes the subject, apparatus, and procedures used. Details are provided in the development of each test procedure.

Finally results of pilot testing , conclusions, and recommendations are presented.

The Functional Basic Word List for Special Pupils

The 2,483 words in the List are the most appropriate for the day to day needs of the special pupil in helping him to learn to read. (Tudyman and Groelle, 1958.) The List is divided into three levels as follows:

Level one has five sub-levels:

A. Pre-primer

B. Primer

C. First Grade

D. Second Grade

E. Third Grade

Level one is suitable* for students with a Chronological Age (C.A.) of 8-0 to 12-6, a Social Age (S.A.) of 7-0 to 11-6, and a Mental Age (M.A.) of 5-7 to 9-3.

Level two is suitable* for students with C.A. 12-7 to 15-6; S.A. 11-7 to 14-6; and M.A. 9-0 to 10-3.

The words in level three are suitable* for students with C.A. 15-7 to 18-0; S.A. 14-7 to 17-0; and M.A. 10-0 to 12-0.

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* Suitable -- reflect the interest and social living experiences and social maturity levels of the child. (Tudyman and Groelle, 1958.)

The purpose of this study was to determine a student's entry vocabulary level. It was assumed that a student's oral and written vocabulary levels differed so it was necessary to test both types. A second purpose of the study was to determine if the students tested knew the words that Tudyman and Groelle suggested they should know. In this study, a student's vocabulary level was the level at which he could read the words and understand their meaning, presented in writing and when presented orally. 'Read' was defined as follows: when a student is presented with a word in writing, he will respond by emitting the sounds associated with that word. "Written meaning was defined as follows: when presented with a word in writing, the student will use the word in a sentence. 'Oral meaning' was defined as follows: when presented with a spoken word, a student will respond by using the word in a sentence. The experimenter determines whether the student used the word correctly using the following criteria: The word had to be used in a grammatically correct manner; i.e., a noun had to be used as a noun. The second criteria was that a student had to use the word in the conventional manner, e.g., if the student used "cat", "I ate the cat" would not be acceptable as a correct answer but "I saw the cat" would be acceptable. The experimenter was also told to use "mature professional judgement" in determining whether the student had demonstrated that he could associate the word with its referent.

This report describes the development of tests and procedures used to measure a student's reading, written and oral vocabulary levels. In this report, the words "read" and "mean" are used as they were defined above unless otherwise indicated. "Know the word" refers to "meaning" as it was defined above; i.e., a student knew a word if he knew the meaning of it.

Included is a critique of the validity of the technique used here and its relationship to learning from films.

METHOD

Subjects:

Five students from an educable mentally retarded (EMR) class were selected by the teacher for testing. The ages of the students varied from 9-6 to 12-0. The measured IQ's varied from 64 to 77 and the mental ages ranged from 6-6 to 9-7. Three girls and two boys were included in the EMR group.

Five students from the Syracuse Scholastic Rehabilitation (SSR) program (for the emotionally disturbed) were matched with the EMR students. However, because of transfers and absences, this grouping could not be strictly followed. The SSR group consisted of five boys.

Apparatus:

During the test, the subjects were taken to an experimental area which housed a desk and several chairs. The latest edition of the List (1963) was used along with the forms and procedures that are presented in Appendix A. A mask, used with the List enabled the experimenter to present only the words he wanted the subjects to consider.

Procedure:

The student was taken from his regular classroom to the experimental area where he was seated at a table with the experimentor. The student was presented with one of the tests described below. The word choice criteria is presented, followed by a description of the original and revised forms of each of the tests.

Word Choice Criteria

There are 2,483 words in the List. To measure a student's vocabulary level, word sampling procedures were used. One tenth of the words were presented to each student. This meant that 248 words had to be presented to each student.

The experimenter discovered in tests with five students using the Verbal Recognition Test, that the students did not maintain responding to the words presented. Subjects left the chair and wandered around the experimental area and looked around the room. This happened after the presentation of about twenty words.

By analyzing the data on the five tests administered to the EMR group, (Subjects 1 - 5 on the Verbal Recognition Test) presented in Table 1, the experimenter found that if a student responded correctly on a certain percentage of the words presented, he also responded the same way on four words. For example, if a student knew 75% of the words in the entire list, he ususally knew three of any four words presented. As a result, the experimenter decided to modify the procedure.

In the new procedure, the child was presented with four words. If he read all four correctly, he was advanced to the next level. If he read

one, two or three words correctly, another four words from the same level of the List were presented and then the student was advanced to the next level. If the child read none of the words presented, the test was stopped. In subsequent testing, this method seemed more favorable to both student and experimenter. A minimum of 28 words and a maximum of 56 words needed to be presented to each student, to determine his level.

Using the above procedure, it was assumed that if a student knew four words from a certain level, he then knew all of the words on that level. To test this assumption a student will be asked to read four words from level 1A. He will then be asked to read all the words from level 1A. The percentage of four words that the student read correctly will be compared to the percentage of all the words he read correctly in level 1A. If the percentages are similar the assumption above will be judged as adequate but if differences between the two percentages are significant, a new sampling technique may have to be devised.

Verbal Recognition Test

The Verbal Recognition Test measured a student's ability to read a written word when the word was presented to him on a printed page. When presented with the word, the student had ten seconds to read the word. If he read the word correctly, the next word was presented. If he read the word incorrectly, the experimenter read the word correctly and then presented the next word.

In the original form of this test, (Verbal Recognition Test Procedure and Criteria -Appendix A), ten percent of the words in the List were

presented to each student.

Results: Of the five students tested, two students were not able to read words at level IA. Two students were not able to read words above level IC and one student was able to read words at level 3. The two students who were able to read half of the words in level IC and the student who read words at level 3 expressed negative reactions to the number of words presented. After about twenty words had been presented, the students began to look around the room and leave the chair. The student who could read the words at level 3 expressed a desire not to be tested after she had been presented with 200 words.

Based on the above results, the test was modified. In the revised procedure (Appendix A), the student was presented with a minimum of four words and a maximum of eight words from each level of the List. In addition, if a student responded incorrectly, the experimenter wrote the word read incorrectly in the appropriate box during the experiment.

Results: The revised procedure was used with the five SSR students. The negative responses observed in the tests with the EMR students as described above, were not observed here.

Written Word Meaning Test

This test tried to determine whether the student knew the meaning of a certain word. "Meaning was not defined and was not used the same way as it is used in this paper. The procedure was adapted from the standard IQ test procedures (Stanford-Binet and Weschler Intelligence Scale for Children).

The original form of this test (Verbal Meaning Test Procedure and Criteria) is included in the appendix. This test, asked the child to

respond to the question, what is the meaning of _____", or what is the opposite of _____".

Results: This version of the test was used with five EMR students who were not part of the experiment described here. The students in this class did not respond when the questions above were asked. It was discovered that many of the students did not know the meaning of 'opposite of'. In addition, many of the experimenters found it difficult to agree on a satisfactory meaning for words such as 'and', 'but' and 'a'.

Based on these data, a new procedure was designed which conformed to the definition of the word 'meaning' as it is defined in this paper. In the revised procedure (Written Word Meaning Test Procedure and Criteria, Appendix A), the student was asked to use the word in a sentence. All subjects responded to this question.

Results: This procedure elicited responses from all subjects tested. Ten students were tested using this procedure and all were assigned a vocabulary level using the results.

Oral Word Meaning Test

This procedure was similar to the Written Word Meaning Test. The only difference was that the word was presented orally by the experimenter instead of being presented in writing. In the original procedure (Auditory Meaning Test Procedure and Criteria, Appendix A), the students were to be asked the meaning of a word, the same way is in the Written Word Meaning Test. Due to the results obtained with that format, this procedure was modified without being tested. It was assumed that if a student did not respond to, what is the meaning of _____" when the experimenter pointed to the word, he would not respond to 'what is the meaning of _____' when the experimenter said the word.

The revised procedure asked the students to use the words in a sentence (Appendix A).

Results: This procedure was used with ten students and was able to measure each student's vocabulary level on the List. It seemed advisable to try the procedure several times before the test began so that each student understood the conditions under which the response should occur in the test situation.

RESULTS AND CONCLUSIONS

The vocabulary levels of students tested using the instruments above is presented in Table I.

Tudyman and Groelle (1958) suggested that children with C. A. 8-0 to 12-6 should know words in level I. In the Verbal Recognition Test, subjects 5, 8, 9 and 10 could read words above level I. In the Written Word Meaning Test, the same four subjects knew the meaning of words above level I. In the Oral Word Meaning Test, three sugjects, 1, 3, and 7 did not know words above level I.

Tudyman and Groelle suggest that children with M. A. 5-7 to 9-3 should know the words on level I. The results show that seven subjects fell into this category. None of the seven could read words above level I. However in auditory meaning, four of the students (2, 4, 7 and 9) knew words at level 2 and above.

The remaining three subjects (5, 8, 10) fell into Tudyman and Groelle's second group (M. A. 9-0 to 10-3). Subject 10 was not able to read words in level 2 while subjects 5 and 8 were able to read words in level 3. In the Written Word Meaning Test subject 10 did not know the meaning of words presented in writing in level 2. Subject 5 knew words in level 2 and subject 8 knew words in level 3. In the Oral Word Meaning Test, subject 5 didn't know words in level 2 while subject 10 knew them. Subject 8 knew words in level 3.

These results indicate that for the most part, the students tested can read the words that Tudyman and Groelle recommend. The students tested also knew the meaning of words at levels higher than their expected levels when the words were presented orally.

The results above also indicate that the tests used above, in the revised forms can be used to assign students to a certain vocabulary level at which they know the words.

RECOMMENDATIONS

The tests above were designed to determine a student's reading, written word and oral vocabulary level of each student. The three tests described above were able to do this. However, to be able to express the meaning of a written word, the student has to read it, either aloud or to himself. Therefore, it is suggested that the Verbal Recognition Test be deleted. In its place, the student will be asked to read a written word aloud before he gives its meaning on the Written Word Meaning Test. Using this procedure, only two tests will be administered to each student, but three sets of data will be available: the student's reading level, the written word vocabulary level and the oral word vocabulary level.

DISCUSSION

With the data above, CBP can assign a vocabulary level to a film, measure a student's vocabulary level and compare the two to determine the number of words in common. However the crucial step is to demonstrate that a functional relationship exists between a student's knowledge of words in a film prior to its presentation and the student's learning from that film.

Presently at CBP, learning from films is assessed using post-film verbal tests. In these tests, the role of words is very important. If the student does not understand the words in the question the probability of his answering it correctly is greatly reduced. However even with the knowledge that a student knows a certain word it must be remembered that the word was not tested in context. The effect of this factor must be determined.

There are several confounding variables that need research. For one thing, the student had not been tested on each word that was in the film. Secondly, a student's knowledge of the words may indicate that he is able to benefit from the captions and the soundtrack, since these stimuli are very similar to the test situation described above. But it may be that the behavioral objective specified does not require knowing a specific word in the film or may require the student to respond to a word correctly identifie in one form but not in another; e.g. responding correctly to the word presented orally but not in the written form (Gropper, G. Learning from Visuals: some behavioral considerations. AVCR, 1966, 14, 37-69).

To show the effects of knowing words on learning from a film, other variables have to be controlled. The experimenter must have some evidence that the student watched the film in question. Such information could be provided by a conjugate reinforcer system and/or eye movement measurement instruments.

TABLE 1

STUDENT	1	2	3	4	5	6	7	8	9	10
C. A.	9-6	9-6	10-6	10-6	12-0	9-6	9-6	10-0	11-0	12-0
I. Q.	70	74	64	68	77	70	96	94	76	80
M. A.	6-6	7-1	6-7	7-2	9-3	6-6	9-1	9-5	8-4	9-7
Verbal Recog.	1A	1A	1C	1C	3+	1C	1A	3+	2	2
Written Wd. Mean.	1A	1A	1B	1A	3	1C	1A	3+	2	2
Oral Word Meaning	1A	3	1A	3	2	3	1A	3+	3	3

Table 1 shows the scores of the subjects tested. Subjects 1-5 are from the EMR group and subjects 6-10 are from the SSR group. The level for each subject refers to the level at which he missed 50% or more of the words presented. The "3+" indicates that the student scored 50% or better in level 3.

APPENDIX A

1. Verbal Recognition Testing Procedure and Criteria.
2. Verbal Recognition Testing Procedure and Criteria (Revised).
3. Verbal Recognition Rating Sheet.
4. Verbal Meaning Testing Procedure and Criteria.
5. Written Word Meaning Testing Procedure and Criteria.
6. Verbal Meaning Rating Sheet.
7. Auditory Meaning Testing Procedure and Criteria.
8. Oral Word Meaning Testing Procedure and Criteria.
9. Auditory Meaning Rating Sheet.

(a copy of the appendix is available from the author upon request)